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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,416	12/18/2001	Suk Won Choi	8733.535.00	6434

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MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

NGUYEN, HOAN C

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,416

Applicant(s)

CHOI ET AL.

Examiner

HOAN C. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 4-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 16-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3, 16-18, 21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (US5479284A).

In regard to claim 1, Watanabe et al. teach (Fig. 11, col. 7 line 35 to col. 8 line 29) a method of fabricating a ferroelectric liquid crystal display comprising:

- maintaining a pressure in a liquid crystal injection chamber at a first pressure, and at the same time maintaining a liquid crystal tray contacted to a liquid crystal panel and an injection hole thereof at a first temperature, to inject a liquid crystal from said liquid crystal tray to said liquid crystal panel;
- increasing the pressure in said chamber to a second pressure higher than said first pressure;
- maintaining said second pressure while cooling said liquid crystal panel (chamber temperature 111), and at the same time, maintaining said liquid crystal tray (plate temperature 113) at t_1 at said first temperature.

In regard to claims 16, Watanabe et al. teach (Fig. 11, col. 7 line 35 to col. 8 line 29) a method of fabricating a ferroelectric liquid crystal display comprising:

- providing, within a liquid crystal injection chamber, a liquid crystal panel adjacent a liquid crystal tray, said liquid crystal panel and said liquid crystal tray connected by an injection hole;
- at a first pressure and at first temperature for filling or packing density of the liquid crystal and remove the void (col. 1 lines 25-29 and col. 3 lines 24-28), injecting liquid crystal material from said liquid crystal tray, through said injection hole, into said liquid crystal panel;
- increasing the pressure in said liquid crystal injection chamber from a first pressure to a second pressure;
- cooling said liquid crystal panel from a first temperature to a second temperature while maintaining said liquid crystal tray at said first temperature.

wherein

- said first temperature is a temperature where the liquid crystal exhibits one liquid crystal phase selected from the group comprising an isotropic phase and a chiral nematic phase, and the liquid crystal injected to said liquid crystal panel is cooled down to the normal temperature to exhibit a smectic phase (col. 7 lines 50-62) according to claims 3 and 21.
- providing the liquid crystal injection chamber and the liquid crystal panel in a vacuum state characterized as having equal pressure between the liquid crystal injection chamber and the liquid crystal panel; increasing a pressure in said

liquid crystal injection chamber from said equal pressure to said first pressure according to claim 17.

- decreasing the temperature of the liquid crystal tray from said first temperature to said second temperature when said liquid crystal panel is cooled to said second temperature according to claim 18.
- the second pressure is maintained during the entire cooling of said liquid crystal panel according to 23.

Response to Arguments

Applicant's arguments filed on Oct. 1, 2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

Watanabe et al. fail to disclose combination of steps in claim 1 and "at a first pressure and at first temperature, injecting liquid crystal material from said liquid crystal tray, through said injection hole, into said liquid crystal panel" in claim 16.

Examiner's responses to Applicants' ONLY arguments are follows:

Claims 1: Watanabe et al. disclose all steps see attachment.

Claims 16: Watanabe et al. disclose "at a first pressure and at first temperature (col. 1 lines 25-29 and col. 3 lines 24-28), injecting liquid crystal material from said liquid crystal tray, through said injection hole, into said liquid crystal panel for filling or packing density of the liquid crystal and remove the void.

Allowable Subject Matter

2. Claims 2, 4, 19, 20 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

Claims 2 and 19, 20 are allowable since the prior art of record does not anticipate obvious to one ordinary skill in the art of a method of fabricating the ferroelectric liquid crystal display further comprising a step of decreasing the pressure of said liquid crystal injection chamber from said second pressure to a third pressure that is lower than said first pressure when said liquid crystal panel is cooled to said second temperature.

Claims 4 and 22 are allowable since they depend allowable claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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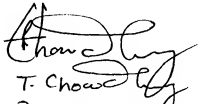
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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T. Chow
Primary Examiner